WHITE PAPER FOR NEH GRANT PF50497-14

General Project Description:
The Dorset House project was originally designed as a two-year endeavor to bring this 1832 building up to modern standards by: 1) controlling harmful temperature and humidity fluctuations, 2) mitigating the risk of fire, 3) reducing light exposure, 4) improving security conditions, and 5) improving exhibition and "open storage" conditions for the Museum's renowned waterfowl decoy collection, numbering some 1,200 objects. By achieving these goals, Shelburne Museum could then reinstall the decoys (placed in storage for the duration of the project) back into the two-story Dorset House. The desired end result would be to allow better physical and intellectual access to the decoy collection, giving an adoring public – eager to view the decoys – a greatly-anticipated reopening in September 2017.

Project Granted an Additional Year to Complete the Work:

Two unanticipated actions affected the implementation of the original two-year schedule. At the end of 2014, Shelburne Museum restructured its staffing, followed by the Director of Development departing for another position in September 2015. In addition, early in the project implementation, it was determined that the post-and-beam structure of the 183-year-old Dorset House required much more reinforcement to support the weight of storage/exhibit shelves proposed for the second floor. Since the structure needed to be reinforced before other projects were implemented, the overall project was set back by about 6 months. These actions did not jeopardize the successful completion of this project. However, because both actions slowed implementation, the Museum extended the two-year project by 12 months in early 2016 as authorized by NEH's prior approval process.

What We Learned During This Project: **Five Important Lessons**

1) Structural Stabilization
When Museum maintenance staff began making preparations to stabilize the structure of the building, the decision was made to consult with an engineer so several concerns and questions could be addressed. Walls and floors were opened in order to examine the underlying timber frame so the structural condition and load ability of the building could be determined. The resulting plan was provided to concrete and timber restoration contractors that specified exactly where new footings and framing were needed to stabilize the compromised structure. One unique solution the engineer suggested allowed the two second-floor galleries to carry the required weight of the new cases without using a support post that would be visible on the first floor and interfere with the historic floorplan. The concept uses shear-plates that are let into a timber and then bolted through a steel strap on the top and bottom, significantly increasing the load-bearing capacity.

Much of the work done by the engineer and contractors was not planned, but the result of that work reassured everyone that the underlying structure was certified to be safe and

sound. The necessity to reinforce the structure before other work was started delayed the implementation of other projects as noted above.

2) Moisture and Humidity

The moisture problem within Dorset House was remedied by several actions: (1) Grading the site so water did not travel from the surrounding landscape directly into the basement through window wells and the cracked cinder block foundation; (2) Installing an interior ground drain with sump and then "encapsulating" the floor and walls with a vapor membrane; (3) Adding gutters and piping that carry water from the roof away from the building; (4) Stabilizing the humidity by using a new residential ducted HVAC system with dehumidification, monitored and controlled with remote IP software; and (5) Filling empty wall and roof cavities with dense-packed cellulose insulation to slow the swings in outdoor temperature and humidity. These actions have resulted in a humidification control in the 40%-60% range desirable by the Museum Conservation Department, eliminating the conditions causing mold growth and preventing further degradation of the building's timber floor system.

Encapsulation was not in the original plan, but came about through consideration of alternative methods of redirecting the water that was making its way into the basement area. The air in the dirt floor basement had always been very saturated with moisture and plastic sheeting had been placed over the entire floor at some point in the past in an attempt to reduce moisture from freely passing into the space from the soil below, with little to no effect. It was thought that pouring a concrete floor on top of a new standard vapor barrier would mitigate the problem and was included as part of the original work plan submitted to NEH. During a site visit to bid the concrete floor, a contractor pointed to evidence that significant amounts of water were coming from numerous cracks in the cinder block walls and window well areas, which a concrete floor would not remedy. He instead proposed "encapsulating" the basement by installing a network of drainage pipes and sump pit to get water out, then sealing the floor and walls using a continuous specialized vapor barrier membrane. This solution was deemed preferable to simply pouring a concrete basement floor, which by itself would be more expensive than the encapsulation.

The system was put to the test prematurely in the spring of 2015 when water from the melting spring snow moved freely into the basement through the window wells before the surrounding exterior landscape had been regraded. The encapsulation was able to keep the basement completely dry even under flood-like conditions, which thankfully protected all of the newly-installed mechanical systems there.

3) Corroded Fire Sprinklers

In order to resolve the many code-related questions being asked by contractors bidding on the job to replace the aged sprinkler system, an independent designer was hired. Discussions with the designer helped resolve the contractor questions and led to the decision to try a new technology in corrosion protection using nitrogen. The black iron sprinkler system, over thirty years old, was seriously corroded so galvanized pipe was suggested, and adding corrosion protection seemed like a practical preventative measure. Industry studies had shown an increase in the service life of dry galvanized schedule 10

pipe by 94% when nitrogen is used in place of compressed air, which continuously introduces moisture that will eventually corrode even galvanized piping. Keeping the system filled with nitrogen can be done with a generator, but is cost prohibitive for a smaller system like ours, so a tank of nitrogen was connected to the piping instead. A special device near the end of the piping slowly replaces the compressed air required by code for the initial fill with 98% nitrogen from the tank, and is then shut off. When the tank empties, the compressor takes over, alerting the fire panel via relay that a refill is needed. Initial monitoring appears one tank will last roughly 15 months.

4) Notes Regarding Window Tinting

All Dorset House windows have a sheet of interior Plexiglass tinting that reduces the ultraviolet light by 99% and visible sunlight by 45% while also serving as an "interior storm window." Care must be taken not to introduce condensation into the space between the existing windows and the Plexiglass tinting. It was found that when the Plexiglass sheet is gasketed to the interior casing, the window sashes must be free of the jamb and the layers of paint and caulking between or it will be difficult for the moisture to escape easily, resulting in condensation.

5) Exhibit Case Construction Methods and Processes

Initially, several banks of "open storage" metal cases with glass doors were going to be added to the second floor that would allow a large number of decoys to be stored on that level while also available for the public to view. Metal was specified for sealed cases to minimize harmful off-gassing of construction materials to the collection, but when the combined weight of the cases was provided to the engineer working on the structural repairs, he suggested using something lighter, so calls for a weight-saving design using a strict off-gassing material requirement list safe for objects was put out to bid. There was a surprising reluctance by several contractors asked to bid on the project who were concerned that material choice and construction methods for the cases would be detrimental to their intended use. Since there were so many questions and doubts regarding what materials were suitable to use to save weight and also be safe for the collection, Museum staff built a prototype using aluminum-faced plywood that showed the required materials could be used with standard construction methods successfully. Bids using the prototype were submitted and the contract was awarded to a local custom millwork shop. The Museum painted and installed the 41 cases which now house the 950 decoys on the second floor in "open storage". On the first floor there are two display cases, eight built-in cases, and several open platform/shelving areas displaying 250 decoys. Museum-grade construction requires many special materials and methods that are not familiar to most millwork shops. In retrospect, it was clear afterwards that the construction of a prototype would have significantly helped by creating a starting point which a Custom Millwork Engineering Designer could use to create precise drawings for putting the job out to bid.

GRANT PRODUCTS

The Dorset House project generated a variety of news coverage, internal news items, a full-fledged major exhibition featuring the Museum's top 80 decoys, gallery talks, a cover feature article in a national publication, and a distinctive catalogue – all of which reflected well on Shelburne Museum. The Dorset House restoration and the reinstallation

of the decoy collection constitute a major milestone in Shelburne Museum's commitment to remaining the largest art and history museum in northern New England and Vermont's foremost public resource for visual art and material culture. In the process, the Museum's well-earned reputation as a national model of Conservation professionalism and stewardship of its collections has only been enhanced by this project.

Attachment 1: Gallery Photos

Attachment 2: Work Plan Photos

Attachment 3: Newsletter Article

Attachment 4: media article

Attachment 5: exhibition of decoys

Attachment 6: cover feature article in national publication

Attachment 7: decoy catalogue

NEH Grant PF50479

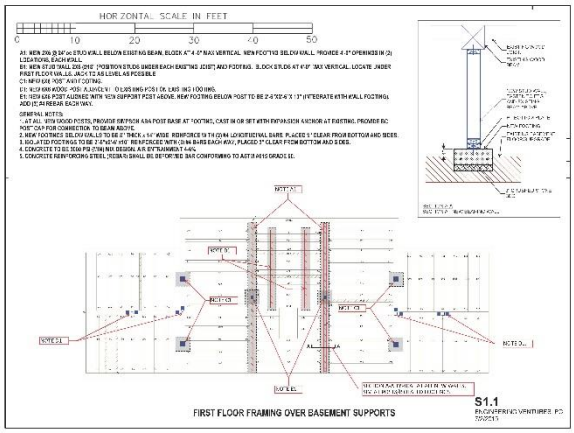
The Dorset House Decoy collection before the project began in 2014

- Poorly lit
- Harmful humidity levels seldom below 60%
- Significant number of decoys not on display

The Dorset House Decoy exhibit after the completed project 2017

- Evenly lit by efficient LEDs
- Humidity stabilized at 40 to 50 percent
- Majority of decoys on public view in “open storage” cases

#5. Framing Repairs



Framing and footer support plan

Pouring support footers

Installing support framing

Installing shear plates

Installing support posts

#6. Pour concrete basement floor with vapor barrier

Surface water getting into the basement

Re-grading the site

Interior drainage pipe

Vapor barrier

#8. Install humidistatically controlled HVAC system

Insulating duct

#10. Upgrade security system panels and install three security cameras

Connecting the new panel

#12. Upgrade Fire suppression System

Threading galvanized schedule 40 pipe

AutoPurge nitrogen valve

#14. Insulate walls and ceiling with cellulose

Injecting dense packed cellulose in the attic

#17. New exhibit cases 1st floor

Geese

#21. Repair slate roof

Replacing damaged valley pieces

#23. Install new open storage cases on 2nd floor

Decoys in storage not on public view

Decoys in new "open storage"

Dorset House Project

Decoys to Return in 2017

The Museum's sole capital project is coming down the homestretch! Restoration of the 1832 **Dorset House** is necessary in order to return the Museum's renowned waterfowl decoy collection to public view. The estimated project cost is $750,000. Boosted by a National Endowment for the Humanities (NEH) grant of $350,000, the Museum has since raised $335,000 towards its project goal of $400,000. An additional $40,000 is sought to support an elegant and informative catalogue of the decoy collection co-published by the Museum and Rizzoli. The Museum plans a celebratory Grand Opening on September 1.

The major overhaul of the building includes: new fire and security systems, total rewiring, a new humidistatically-controlled HVAC system, a poured concrete basement floor, roof repairs, a handicapped access walkway, and construction and installation of 51 state-of-the-art display cases for the decoy collection. These cases, distributed on the first and second floors, will have modern LED lighting and will provide visitors with greatly enhanced viewing and more information than was previously presented.

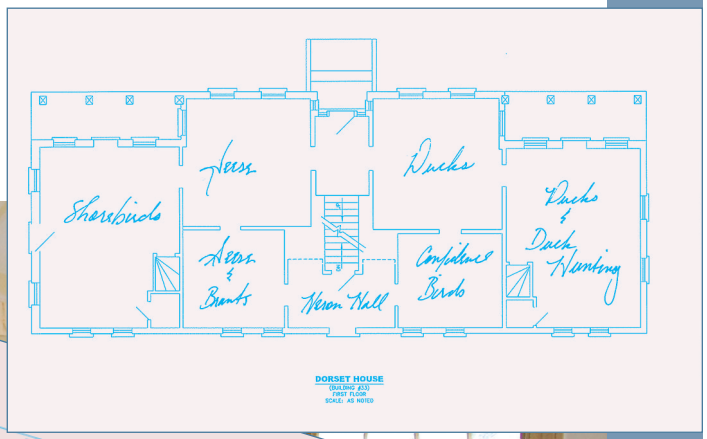
For the past two years the Museum's collection of 1,200 decoys has been in storage, removed from Dorset House in anticipation of the restoration. However, eighty of the prize decoys were brought back to public view during the exhibition *Birds of a Feather: Shelburne Museum's Decoy Collection* on display from November 21, 2015, through June 19, 2016.

Dorset House was spotted by Museum founder Electra Havemeyer Webb on a Sunday drive in 1953 in East Dorset, VT. She had the building dismantled, hauled to Shelburne, and reassembled specifically to house her growing collection of decoys. The Greek Revival-style building is architecturally significant, historically important and a vital aspect of the Shelburne Museum experience. For sixty years, scholars, collectors, and an adoring public have come to **Dorset House** to see the decoys.

THE DECOYS

Mrs. Webb augmented her own collection in 1952 with the acquisition of 400 premiere decoys once owned by Joel Barber, a New York collector, whose book *Wild Fowl Decoys* (1934) was the first to identify decoys as art and historical artifacts. The Shelburne collection now boasts some of the very best work of early master carvers such as A. Elmer Crowell, Charles (Shang) Wheeler, Captain Charles Osgood, Albert Laing, and the Ward Brothers, to name just a few. These talented craftsmen were responsible for the transformation of waterfowl decoys from crudely-carved tools into masterpieces of fine art.

DAVID HUNTINGTON
Grants and Endowment Development Associate



HOW TO HELP

Gifts to support the **Dorset House** project are encouraged. Naming opportunities (including a gallery or a wing) are still available. If interested in securing more information or in making a gift, please contact David Huntington at (802) 985-3346 x 3390 or at dhuntington@shelburnemuseum.org

Dorset House reopens at Shelburne Museum

By Shelburne News on September 7, 2017No Comment

Courtesy photo
Dorset House at Shelburne Museum.

After several years of renovation, Dorset House at Shelburne Museum – home to its renowned decoy collection – is open again to the public.

Inside, visitors can see more than 1,000 decorative bird carvings.

The restoration includes new wiring, insulation, climate control, lighting, security and fire detection systems, reinforced beams, repaired slate roof and marble steps, refurbished porches, handicapped access, and state-of-the-art display cases with LED lighting. The project was supported by a grant from the National Endowment for the Humanities and museum donors.

The Greek Revival structure, built around 1832 in East Dorset, was dismantled and moved to the museum in 1953 to house and exhibit the decoy collection.

The exhibition features pieces by master craftsmen from all over North America. Dorset House closes Oct. 31 for the season.

Birds of a Feather Exhibition: Shelburne Museum's Decoy Collection

Birds of a Feather, organized by Shelburne Museum, will be on view at the Museum's Pizzagalli Center for Art & Education from November 21, 2015 to May 1, 2016. The exhibition explores the illusory and deadly beauty of American wildfowl decoys. Culled from Shelburne Museum's own collection, the rare and historically significant decoys featured represent the work of master artisans such as A. Elmer Crowell, Charles "Shang" Wheeler, Albert Laing, and Lemuel T. and Samuel Ward. Thirteen bird species will be featured ranging from black ducks and Canada geese, to swans, herons, and shorebirds.

Museum director Tom Denenberg said, "Shelburne Museum's remarkable collection provides an unprecedented opportunity to examine the finest decoys in America. They are icons of American folk art. Carvers, such as A. Elmer Crowell, knew their subject intimately, and put a lifetime of observation and years of practice into these exquisite masterpieces."

Operating under the principle that "birds of a feather flock together," decoys are designed by hunters to lure game birds into gunning range by physically mimicking waterfowl in safe waters. Carvers of decoys are often also hunters, but no less naturalists and admirers of the beauty and diversity of their prey.

Hunters and historians alike will be interested to know that the exhibition will also feature vintage duck-hunting gear including a Nova Scotia duck tub, a Punt Gun, and other related objects. **Related event**: On opening day, November 21, Curator Kory Rogers will give a brief talk on the history of the collection at 2 p.m.

HUNTING & FISHING COLLECTIBLES MAGAZINE

"History and Artifacts from America's Sporting Tradition"

Est. 2000

Volume 17, Number 3 May-June, 2017 $9.95

Antiques & Collectibles

Birds of a Feather: Wildfowl Decoys At Shelburne Museum

Written by Kory W. Rogers, Foreword by Thomas Denenberg, Text by Cynthia Byrd and Nancie Ravenel

A book that celebrates one of the most breathtaking and comprehensive collections of wildfowl decoys in America. Bird decoys were used for hunting in North America until the advent of hunting regulations in the early twentieth century, when decoys started to be prized and collected as masterpieces of American folk art. This handsome book is the first examination of the historic and unparalleled decoy collection at Shelburne Museum. Featuring new photography of 250 of the museum's most important and artistically carved decoys, it includes examples made by the most respected American carvers: Charles Osgood, Lem and Steve Ward, John Blair, Bill Bowman, Nathan Cobb, Jr., Lee Dudley, James Holly, Jr., Nathan Horner, Albert Laing, Joseph Lincoln, A. Elmer Crowell, and Charles "Shang" Wheeler. The story of the collection begins with Joel Barber, the pioneer decoy enthusiast and New York architect, artist, and carver, whose gift of 400 superior examples established the collection in 1952. Several essays provide groundbreaking scholarship on the origins, construction, and attribution of bird decoys, imparting critical advancements to our modern understanding of this revered tradition.

Reviews

- "The unparalleled collection of 1,400 wildfowl decoys at Shelburne Museum in Shelburne, Vt., was established with a 1952 gift of more than 400 superior examples from Joel Barber, a New York City architect, artist, and carver. Barber's groundbreaking 1934 book "Wild Fowl Decoys" was the first to identify the importance of bird decoys as a uniquely American art form." —*Antiques & Auction News*

  "The unparalleled collection of wildfowl decoys at Shelburne Museum are featured in the newly published *Birds of a Feather: Wildfowl Decoys at Shelburne Museum*..." —*Vermont Country Sampler*